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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/882,471	06/14/2001	Lee McBryde	4006P001	8067

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EXAMINER

CHAUDRY, MUJTABA M

ART UNIT	PAPER NUMBER
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2133

DATE MAILED: 12/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/882,471	Applicant(s) MCBRYDE ET AL.	
	Examiner Mujtaba K Chaudry	Art Unit 2133	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 July 2004.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☒ Claim(s) 1-13 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

The corrected or substitute drawings were received on June 14, 2001. These drawings are accepted.

Response to Amendment

Applicants' arguments/amendments with respect to previously presented claims 1-7 and newly submitted claims 8-13 filed July 26, 2004 have been fully considered but are not persuasive. The Examiner would like to point out that this action is made final (See MPEP 706.07b).

Applicants contend, "...XOR 62 as taught by DeKoning et al. is not coupled to the host interface..." The Examiner respectfully disagrees. DeKoning teaches (Figure 2 and col. 4) a block diagram of an improved RPA circuit 20 for the disk array controller of FIG. 1. The RPA circuit 20 includes a RPA memory controller 60, exclusive-OR (XOR) engine 62, and intermediate parity buffer 64. The RPA memory controller 60 is operatively coupled to the system bus 28 and is operatively coupled to the RPA memory 22 via a memory bus 66. The RPA memory controller 60 is also operatively coupled to the intermediate parity buffer 64 via the XOR engine 62. The RPA memory controller 60 controls (1) the flow of data between the system bus 28, the RPA memory 22, and the intermediate parity buffer 64, and (2) the operation of the XOR engine 62. The XOR engine 62 primarily performs a bit-wise XOR operation on data stored in the intermediate parity buffer 64 with data received from the RPA memory controller 60 as described further below. The XOR engine 62 may also store and/or retrieve data in the

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intermediate parity buffer 64 without performing an XOR operation thereon. The RPA memory 22 permits the intermediate storage of blocks of read data (i.e. data read from the disk array 33 which is sent to the host device 31) and blocks of write data (i.e. data received from the host device 31 which is written to the disk array 33). As a result, the RPA memory 22 provides a caching function wherein the disk array controller 10 may utilize read/write data stored in the RPA memory 22 instead of accessing one or more of the disk drives associated with the disk array 33. In addition, the RPA memory 22 permits the disk array controller 10 to perform multiple read operations and write operations concurrently. In the embodiment being described, the RPA memory 22 may be implemented as Dynamic Random Access Memory (DRAM). The intermediate parity buffer 64 may define one or more buffer locations 64a-64d for storing intermediate parity information that is generated during read/write data transfers across the system bus 28 as described further below. The multiple buffer locations 64a-64d permit the disk array controller 10 to concurrently perform multiple read/write data transfers to and from the disk array 33, as well as to perform read/write data transfers involving multiple blocks of data per each disk drive of the disk array 33. In particular, DeKoning teaches (Figures 1 and 2) the XOR engine (62) coupled to the memory controller (60), which is analogous to the host network interface of the present application. The memory controller (60) is also coupled to the PCI bus (28).

Applicants contend, "...in Applicants claim 2, the claimed logic means is for generating an XOR parity byte, checking and correcting detected parity errors..." The Examiner respectfully disagrees. Neufeld teaches (col. 2) a dedicated XOR engine generates parity data on

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a word for word basis from up to four different transfer blocks. The XOR engine is also capable of writing the result to a specified drive or to a transfer buffer through a subchannel.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-13 are rejected under 35 U.S.C. 101 because the language of the claim raises a questions as to whether the claim is directed merely to an abstract idea that is not tied to a technological art, environment or machine which would result in a practical application producing a concrete, useful, and tangible result to form the basis of statutory subject matter under 35 USC 101. The claims merely state items comprised onto a data management system. They do not state what is being performed and thus there is a lack of utility.

Claim Objections

Claims 1-13 are objected to because of the following informalities:

- The claims repeatedly use the term “cache” which should be replaced with “cache memory” to be clear.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

- Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The phrase in step (d), "...and for coupling to a plurality of storage devices" is not clear. It is not clear what the Applicants wish to convey. Claims 2-5 depend from claim 1 and inherently include limitations therein and therefore are rejected as well.
- Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The phrase in step (d), "...and for coupling to a plurality of storage devices" is not clear. It is not clear what the Applicants wish to convey.
- Claim 6 recites the limitation "said XOR engine" in step (d). There is insufficient antecedent basis for this limitation in step (d). It doesn't make sense for the "wherein said XOR..." to be part of step (d). For examination purposes, it will be construed as being under step (a).
- Claim 7 recites the limitation "said XOR engine" in step (d). There is insufficient antecedent basis for this limitation in step (d). It doesn't make sense for the "wherein said XOR..." to be part of step (d). For examination purposes, it will be construed as being under step (a).
- Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The terms "bus expander" and "bus funnel" are not clear in the claim language. It is not clear what the Applicants wish to convey.

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- Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The phrase in step (d), "...and for coupling to a plurality of storage devices" is not clear. It is not clear what the Applicants wish to convey. Claims 9-11 depend from claim 8 and inherently include limitations therein and therefore are rejected as well.

- Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The phrase in step (d), "...and for coupling to a plurality of storage devices" is not clear. It is not clear what the Applicants wish to convey.

- Claim 12 recites the limitation "said XOR engine" in step (d). There is insufficient antecedent basis for this limitation in step (d). It doesn't make sense for the "wherein said XOR..." to be part of step (d). For examination purposes, it will be construed as being under step (a).

- Claim 13 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The phrase in step (d), "...and for coupling to a plurality of storage devices" is not clear. It is not clear what the Applicants wish to convey.

- Claim 13 recites the limitation "said XOR engine" in step (d). There is insufficient antecedent basis for this limitation in step (d). It doesn't make sense for the "wherein said XOR..." to be part of step (d). For examination purposes, it will be construed as being under step (a).

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- Claim 13 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The terms "bus expander" and "bus funnel" are not clear in the claim language. It is not clear what the Applicants wish to convey.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by DeKoning et al. (USPN 5883909). See paper No. 3.

Claim Rejections - 35 USC § 103

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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Claims 2-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over DeKoning et al. (USPN 5883909) in view of Neufler (USPN 5668971). See paper No. 3.

The Examiner disagrees with the Applicant and maintains rejections with respect to previously presented claims 1-7 and newly submitted claims 8-13. The Examiner would like to point out that newly submitted claims substantially include limitations that are in previously submitted claims. All arguments have been considered. It is the Examiner's conclusion that previously presented claims 1-7 and newly submitted claims 8-13 are not patentably distinct or non-obvious over the prior art of record. See office action, paper No. 3.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). Additional pertinent prior arts have been cited in PTO-892 attached for Applicants review.

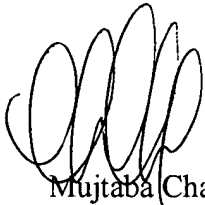
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing

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date of this final action. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiries concerning this communication should be directed to the examiner, Mujtaba Chaudry who may be reached at 571-272-3817. The examiner may normally be reached Mon – Thur 6:30 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, please contact the examiner's supervisor, Albert DeCady at 571-272-3819.



Mujtaba Chaudry
Art Unit 2133
November 30, 2004



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